IN THE CLAIMS:

Please amend claim 1 as follows:

1. (Currently Amended) A method of flow control management of data packets, said method comprising the steps of:

determining each time data is being written to memory in order to calculate a memory used amount;

determining each time data is being freed from memory in order to calculate a memory freed amount;

calculating how much total memory is being used using said memory freed amount and said memory used amount;

comparing the total memory being used to a first predetermined threshold, wherein when said first predetermined threshold is reached a first threshold command is issued indicating that said first predetermined threshold has been reached; and

wherein the memory is implemented as a linked list, with pointers pointing to next memory locations in the linked list and the determining steps are performed when at least one of the pointers is moved.

2. (Original) The method as recited in claim 1 wherein said step of determining each time data is being written to memory comprises the step of determining when a command indicating that memory has successfully received a data packet is transmitted over a bus.

3. (Original) The method as recited in claim 2 wherein said command is a reception complete command.

4. (Original) The method as recited in claim 1, wherein said step of determining each time data is being freed from memory comprises the step of determining when a command indicating that a data packet in memory is no longer needed is transmitted over a bus.

5. (Original) The method as recited in claim 4 wherein said command is a memory free command.

6. (Original) The method as recited in claim 1, wherein said step of calculating how much total memory is being used by said switch comprises the steps of:

incrementing a counter each time data is being written to memory; and

decrementing said counter each time data is being freed from memory, wherein said counter indicates the total memory being used.

7. (Previously Presented) The method as recited in claim 1, wherein said step of determining each time data is being written to memory comprises the step of:

determining when a reception complete command indicating that memory has successfully received a data packet is transmitted over a bus,

wherein said step of determining each time data is being freed from said memory comprises the step of,

determining when a memory free command indicating that a data packet in memory is no longer needed is transmitted over a bus; and

wherein said step of calculating how much total memory is being used by said memory comprises the steps of,

incrementing a counter each time a reception complete command is transmitted over said bus; and

decrementing said counter each time a memory free command is transmitted over said bus, wherein said counter indicates how much total memory is being used.

8. (Original) The method as recited in claim 1, wherein said first threshold command indicates that memory is becoming full.

9. (Original) The method as recited in claim 1, further comprising the step of comparing the total memory being used by said switch to a second predetermined threshold, wherein when said second predetermined threshold is reached a second threshold command is issued indicating that said second predetermined threshold has been reached.

10. (Original) The method as recited in claim 9, wherein said second threshold command indicates that data packets will be dropped.

11. (Original) A method of flow control management of data packets, said method comprising the steps of:

determining a memory address to which a start pointer is pointing, wherein said start pointer points to a next memory location in a linked list to be read from memory;

determining a memory address to which an end of list pointer is pointing, wherein said end of list pointer points to a last memory location in said linked list;

calculating from said start pointer and said end of list pointer a number of memory addresses which are being used by said linked list to determine a total amount of memory being used;

comparing said total amount of memory being used to a first predetermined threshold, wherein when said first predetermined threshold is reached a first threshold command is issued indicating that said first predetermined threshold has been reached.

12. (Original) The method as recited in claim 11, wherein said first threshold command indicates that memory is becoming full.

13. (Original) The method as recited in claim 11, further comprising the step of comparing said total amount memory being used by said switch to a second predetermined threshold, wherein when said second predetermined threshold is reached a second threshold command is issued indicating that said second predetermined threshold has been reached.

14. (Original) The method as recited in claim 13, wherein said second threshold command indicates that data packets will be dropped.

15. (Previously Presented) A switch, comprising:

a bus;

a memory interface connected to said bus and to a memory;

a receive port connected to said bus, said receive port receiving data packets for transmission to said memory through said bus and said memory interface;

a transmit port connected to said bus, said transmit port transmitting data packets from said memory through said transmit port out of said switch; and

a flow control manager connected to said bus, said flow control manager comprising,

a bus monitor that determines when said data packets are being transmitted to said memory and when said data packets are being transmitted from said memory to said transmit port;

a counter that is incremented each time data packets are transmitted to said memory and decremented each time data packets are transmitted from said memory to said transmit port, wherein said counter indicates a memory being used value; and

a first comparator that compares said counter to a first predetermined threshold, wherein when said counter meets said first predetermined threshold a first threshold command is transmitted across said bus; and

wherein the memory is implemented as a linked list, with pointers pointing to next memory locations in the linked list.

16. (Original) The switch as recited in claim 15, wherein said bus monitor is configured to determine that said data packets are being transmitted to said memory when a reception complete command is transmitted over said bus;

wherein said bus monitor determines that said data packets are being transmitted from said memory to said transmit port when a memory free command is transmitted over said bus; and

wherein said counter is incremented each time said reception complete command is transmitted over said bus and said counter is decremented each time a memory free command is transmitted over said bus.

17. (Original) The switch as recited in claim 15, wherein said first threshold command indicates that memory is becoming too full.

18. (Original) The switch as recited in claim 15, further comprising a second comparator that compares said counter to a second predetermined threshold, wherein when said counter meets said second predetermined threshold a second threshold command is transmitted across said bus indicating that said second predetermined threshold has been reached.

19. (Original) The switch as recited in claim 15, wherein said second threshold command indicates that data packets will be dropped.

20. (Original) A switch, comprising:

a bus;

a memory interface connected to said bus and to a memory;

a receive port connected to said bus, said receive port receiving data packets for transmission to said memory through said bus and said memory interface;

a transmit port connected to said bus, said transmit port transmitting data packets from said memory through said transmit port out of said switch; and

a flow control manager connected to said bus, said flow control manager comprising:

a start pointer determiner that determines a memory address to which a start pointer is pointing to, wherein said start pointer points to the next memory location in -a linked list to be read from memory;

a end of list pointer determiner that determines a memory address to which an end of list pointer is pointing, wherein said end of list pointer points to the last memory location in said linked list;

a memory used calculator that determines how many memory addresses are being used by said link list to determine a total amount of memory being used; and

a first comparator that compares said total amount of memory being used to a first predetermined threshold, wherein when said total amount of memory being used meets said first predetermined threshold a first threshold command is transmitted across said bus.

21. (Original) The switch as recited in claim 20 wherein said first threshold command indicates that said memory is becoming full.

22. (Original) The switch as recited in claim 20 further comprising a second comparator that compares said total amount of memory being used to a second predetermined threshold, wherein when said second predetermined threshold is reached a second threshold command is issued indicating that said second predetermined threshold has been reached.

23. (Original) The switch as recited in claim 22 wherein said second threshold command indicates that data packets will be dropped.